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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/994,279	CHIANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David Nhu	2818	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/8/05.
2. ☒ The allowed claim(s) is/are 1-13, 17, 19 and 23-25.
3. ☒ The drawings filed on 26 November 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 60/254,28.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

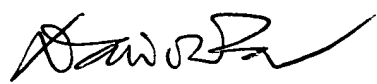
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the change and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**Claims 14-16, 18, 20-22 are cancelled.**

### REASONS FOR ALLOWANCE

2. Claims 1-13, 17, 19, 23-25 are allowed.

3. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests as cited in claims 1, 17, 19: reacting said substrate with said modulated ions to remove any contaminants from said substrate and producing a modified substrate; introducing at least one additional ion generating feed gas into said evacuated chamber; generating a second plasma from said additional ion generating feed gas into said evacuated chamber; exposing said modified substrate to said additional ions; modulating said additional; reacting said adsorbed monolayer of said first reactant gas with said modulated additional ions to deposit said thin film (as cited in claim 1); reacting said substrate with said radicals to remove any contaminants from said substrate and producing a modified substrate; introducing at least one additional radical generating feed gas into said evacuated chamber; generating a second plasma from said additional radical generating feed gas to form additional radicals; exposing said modified substrate to said additional radicals; reacting said adsorbed

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monolayer of said first reactant gas with said modulated additional radicals to depend said thin film (as cited in claims 17, 19);

4. Applicants filed an amendment on 5/10/05, and also filed at that time **a terminal disclaimer statement with reference to USP: 6, 428, 859 B1.**

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### CONCLUSION

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Chiang et al (6,428,858 B1): Sequential Method for Depositing A Film Modulated Ion-Induced Atomic Layer Deposition .

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Nhu , (703) 306- 5796. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

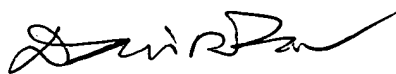
The examiner's supervisor, David Nelms can be reached on (703) 308-4910.

*The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.*

David Nhu 

May 24, 2005



**DAVID NHU**  
**PRIMARY EXAMINER**

introducing at least one additional radical generating feed gas into said evacuated chamber;

generating a second plasma from said additional radical generating feed gas to form additional radicals;

exposing said modified substrate to said additional radicals;

reacting said adsorbed monolayer of said first reactant gas with said additional radicals to deposit said thin film; and

repeating each of the aforementioned steps for each film deposition layer.

20. (cancelled)

21. (cancelled)

*Cancelled*

22. (withdrawn)

23. (previously presented) The sequential method of claim 1 wherein said additional radical generating feed gas is the same feed gas as said first radical generating feed gas.

24. (previously presented) The sequential method of claim 17 wherein said additional radical generating feed gas is the same feed gas as said first radical generating feed gas.

25. (previously presented) The sequential method of claim 19 wherein said additional radical generating feed gas is the same feed gas as said first radical generating feed gas.